

REMARKS

I. Status of the Application

Claims 1-79 were pending. In response to the Examiner's restriction requirement of December 17, 2002, applicants elected Group XI (claims 56 and 60-65) without traverse. Applicants acknowledge that claims 1-55, 57-59 and 66-79 are withdrawn, but reserve all rights to pursue those claims in subsequently filed, continuations, continuations-in-part and/or divisional applications.

For search purposes, applicants elected Subgroup I a nucleotide and Subgroup II a diazaonium dye. The Examiner withdrew claims 61-63 as being drawn to non-elected species, there being in the Examiner's view no allowable generic claim. Applicants respectfully traverse the withdrawal of claims 61-63 and the Examiner's rejections/objections to claims 56, 60, 64 and 65 as explained in detail below.

II. Priority/Related Applications

The Examiner has objected to the applicants' priority claim on the grounds that applications 60/030,826, 09/578,282, and 08/969,227 fail to provide adequate support under 35 U.S.C. §112 for the instant application since in the Examiner's view they do not contain a reference to one of the steps of the claims (step b) coating a surface with a photobleachable substance. Applicants respectfully traverse.

Without taking issue for now with the Examiner's substantive view of the disclosures of the applications objected to, there is no requirement that a priority document must disclose or support each and every element of an application or have some exact disclosure relationship as implied by the Examiner. Thus, applicants respectfully request that this holding be withdrawn.

Moreover, as set forth below, the pending claims are allowable even with the Examiner's erroneous holding as to the priority date of the application. Further, in view of the above, applicants respectfully request that the Examiner withdraw this objection to the priority claim.

III. Claim Objections

The Examiner objected to claims 60, 64, and 65 on the grounds that these multiply dependent claims depend from non-elected claim 57. The claims have been amended as per the Examiner's suggestions to depend only from claim 56, obviating this ground of rejection.

IV. The Claims Are Allowable under Section 112, 1st Paragraph

The Examiner has rejected claims 56, 60, 64 and 65 under 35 U.S.C. § 112, first paragraph, as containing subject matter not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventors were in possession of the claimed subject matter at the time the application was filed. In particular, the Examiner's objections focus on the Examiner's view that the instant claims are improper because "a virtually unlimited number of compounds" fall into the "claimed genus of 'polymer array.'" Applicants respectfully traverse.

Applicants are entitled to claims commensurate in scope with the invention. See, e.g., In re Friedman, 136 USPQ 381 (CCPA 1962). The claims should not be limited to mere examples of the invention. Moreover, there is no prohibition against the use of "functional" language. Such language is contemplated by section 112 (see, e.g., In re Roberts, 176 USPQ 313, 315 (CCPA 1973)) as the CCPA has explained:

We are convinced that there is no support, either in the actual holdings of prior cases or in the statute, for the proposition, put forward here, that "functional" language, in and of itself, renders a claim improper. We have also found no prior decision of this or any court which may be said to hold that there is some other

ground for objecting to a claim on the basis of any language, "functional" or otherwise, beyond what is already sanctioned by the provisions of 35 U.S.C. 112.

Assuming that an applicant is claiming what he regards as his invention, there are in reality only two basic grounds for rejecting a claim under § 112. The first is that the language used is not precise and definite enough to provide a clear-cut indication of the scope of subject matter embraced by the claim. This ground finds its basis in the second paragraph of section 112 * * *. The second is that the language is so broad that it causes the claim to have a potential scope of protection beyond that which is justified by the specification disclosure.

In re Swinehart, 169 USPQ 226, 229 (1971).

Applicants thank the Examiner for the Examiner's recognition that the application is enabling for the fabrication of polynucleotide and polypeptide arrays using pyrylium or diazonium dyes as the photobleachable compound. Office Action at p. 5. However, applicants disagree that the claims should be limited to those specific class of compounds. Polynucleotides and polypeptides are well known examples of polymers. But the specification explicitly describes in detail other polymers which may be employed in the context of the instant invention including specifically: polyurethanes, polyesters, polycarbonates, polyureas, polyamides, polyethyleneimines, polyarlene sulfides, polysiloxanes, polyimides, and polyacetates. Application at p. 8. The application also discloses and incorporates by reference patents and publications on polymers. Applicants amply describe sufficient polymers to fully enable the claims as drafted.

The Examiner also states that the specification is inadequate because "there is insufficient guidance as to how to make/use **any** 'polymer array' using **any** 'photobleachable compound or group.'" (Emphasis in original). But there is no such requirement in the patent law. It is well settled that a patent specification needn't set forth every possible embodiment of a

generic claim. The disclosure in the specification need only bear a reasonable relationship to the scope of the claims.

Here, the specification discloses ample examples of polymers and photobleachable compounds which could be employed by those of skill in the art to practice the claimed invention without undue experimentation. This satisfies the requirements of 35 U.S.C. § 112, paragraph 1. In view of this, applicants respectfully request that this rejection be withdrawn.

V. The Section 112, Second Paragraph Rejections

The Examiner has rejected claims 56, 60, 64 and 65 under 35 U.S.C. § 112, second paragraph for failing to particularly point out and distinctly claim the subject matter which the applicants regard as the invention. Applicants have amended the claims to overcome these rejections.

- A. With regard to claim 56, the Examiner objected that the term “synthesis groups” in step a. lacks clear antecedent basis in that the claim earlier referred to “synthesis intermediates”. To overcome the Examiner’s objection, applicants deleted the term “groups” and added the term “intermediates” to provide antecedent basis.
- B. In step b) of claim 56, the Examiner objected to the phrase “photobleachable compound or group” (emphasis in original) as step c) referred to said “photobleachable compound”. To overcome the Examiner’s objection to lack of a proper antecedent basis, applicants deleted the phrase “or group” from step b), providing clear antecedent basis for applicants’ recitation of “photobleachable compound” in step c).
- C. The Examiner also objected that claim 56 was confusing in that the preamble

recited a “method for synthesizing a polymer array”, while step g) recited that in the last step a “desired polymer sequence is obtained.” Applicants agree and to overcome the Examiner’s objection on this ground have amended step g) to recite that the desired polymer array is obtained by deleting “sequence” and adding the term “array”.

To more accurately point out and describe the invention, applicants have amended the first word of the first step of the claim by deleting the term “forming” and inserting the term “providing”. No substantive change is caused by this amendment.

IV. The Claims Should Be Allowed over Section 103

The Examiner rejected claims 56, 60, 64 and 65 under 35 U.S.C. § 103(a) as being unpatentable over Pirrung et al. (US 5,143,854) in view of Zebala (US 6,159,681). Applicants respectfully traverse.

The Examiner admits that there is no teaching or suggestion in the primary reference (Pirrung et al.) of a step of coating the surface (having synthesis intermediates with a reactive group protected by a photosensitive protecting group) with a substance comprising a photobleachable compound (step b) of claim 56. It follows from this admission that Pirrung et al. also does not teach or suggest three other required steps of claim 56: irradiating the surface to remove the photobleachable compound (and simultaneously the protective group) (step c), removing the photobleachable compound from the surface (step d). and recoating the surface with a substance comprising a photobleachable compound if another synthesis intermediate is to be added (step f).

The Examiner argues that the admitted deficiency in Pirrung et al. may be found in Zebala. However, analysis of Zebala reveals that it does not remedy the deficiencies in Pirrung

et al., nor does it render the claims obvious to a person of skill in the art either alone or in combination with Pirrung et al.

First, even if it can be argued that Zebala suggests step b), which applicants do not believe in any case is correct, there is no teaching or suggestion in Zebala of a recoating step as set forth in step f) as required by claim 56. Moreover, there is no teaching or suggestion in Zebala of step c) (irradiating the surface and simultaneously removing both the photobleachable compound and the photoprotective group of the synthesis intermediately. Under these circumstances, the combination of Pirrung et al and Zebala does not even create a prima facie case of obviousness.

Moreover, the teaching in Zebala regarding coating a biological material with a photoresist layer is not at all analogous to or suggestive of the step of coating a surface with a photobleachable compound as required by step b) of claim 56. In Zebala, coating the biological substance with a photoresist followed by solubilization of the photoresist layer via irradiation is solely taught as a means to increase or enhance imaging of the biological material. There is no teaching or suggestion that the photoresist layer may be used in the construction of an array of polymers. It is black letter law that obviousness requires some teaching or suggestion in the prior art under consideration of the missing element in the primary reference. But, as set forth above, there is no such teaching or suggestion in Zebala of the use of a photoresist layer for fabrication of an array of polymers.

In view of the foregoing, applicants respectfully request that the Examiner's rejection of the claims at issue over 35 U.S.C. § 103(a) be withdrawn.

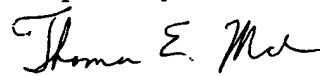
IV. Conclusion

Reconsideration and allowance of all pending claims is respectfully requested. If a telephone conversation with Applicants' attorney would expedite prosecution of the above-identified application, the Examiner is urged to call the undersigned at (408) 731-5875.

Further, applicants respectfully request that this paper be treated as an appropriate petition for a one month extension of time. The Examiner is hereby authorized to deduct any necessary fees in this regard from applicants' deposit account no. 01-0431.

Dated: 8/4/03

Respectfully submitted,



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